Collaborations for interdisciplinary research

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computer perception

vision and audition

machine learning

neuroscience
computer perception

vision and audition

machine learning

signal processing

new problems

adaptive robustness

neuroscience

model constraints

tools and theories
A quick example of an interdisciplinary project
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- Train statistical model
- Synthesis
  - Audio therapy - tinnitus
  - Experimental stimuli (controlled, natural)

Time /s
Frequency /kHz

Events:
- Fire
- Stream
- Wind
- Rain
- Footsteps
- Tent zip
A quick example of an interdisciplinary project

- **Train statistical model**
  - Time /s
  - Frequency /kHz
  - Footsteps
  - Fire
  - Stream
  - Wind
  - Rain
  - Tent zip

**Analysis**
- Noise removal (spam)
- Noise detection
- Noise recognition

**Synthesis**
- Audio therapy - tinnitus
- Experimental stimuli (controlled, natural)
Two main reasons to collaborate in interdisciplinary research

- allow you to **answer questions** that neither group could do alone
  - expertise/methods/equipment/data
  \[ \Rightarrow \] relatively easy to judge

- **raise interesting questions** that you wouldn’t have thought of otherwise
  - harder to judge in advance but lower cost
  - e.g. discussion versus experiments
  - tend to hangout in other labs e.g. for lab meetings
Collaborations: word of warning

- **open, interested and proactive** (professional network)
- you have limited time and often to them **you’re a free resource**
  - pick collaborations very carefully
  - figure out what you want out of a collaboration
  - **learn to say “No”**

if uncertain, write down how you would see the collaboration to a funding agency
Collaborations: making collaborations work

- choose a topic that will interest them as much as it does you

- **generous** (or at least **transparent**) when it comes to **authorships** etc.

- be prepared to learn a **different language**
  - start of project (language barrier)
  - end of project (writing up)
Collaborations: making collaborations work

• no one on the project has the complete picture: more pitfalls
  – need good communication lines
  – clear who’s responsible for what

• often non-local making communication harder
  – pick up the phone!

• takes more time to get going
Interdisciplinary research: wider issues

- you still have to **have a home turf** (or at least have to be perceived as having one)
- can’t completely be a **jack of all trades** living at the interface of two or more fields
- otherwise it’s hard to get funding/a permanent job etc.
Summary

- my experience of collaboration has been **almost uniformly positive**

- if you have a good idea of what you’re interested in, then **there’s little to lose and a lot to gain** by finding someone with a different angle on, or way of studying, that same thing.

- don’t worry about attaching a pre-defined label to “**what you do**”: as long as it hangs together for you then there is probably a logic for it